



**CITY OF HAYWARD**  
**AGENDA REPORT**

AGENDA DATE 12/14/99  
AGENDA ITEM \_\_\_\_\_  
WORK SESSION ITEM WS 2

**TO:** Mayor and City Council  
**FROM:** City Manager  
**SUBJECT:** Audio in the Council Chambers and the Rotunda

**RECOMMENDATION:**

It is recommended that the Council review and comment on this item.

**BACKGROUND:**

Staff has undertaken a review of the audio in the Council Chamber and the rotunda in city hall to improve the sound delivery in these two areas. Within the Chamber the concern is the audio when heard from the dais and audience, as well as the live televised broadcast. Within the grand rotunda, given the number of special events, such as employee recognition ceremonies, graduation ceremonies, and community-wide events, the desire is to install a permanent sound system, where currently one is rented for each occasion.

The three firms that are most familiar with the design and installation of the current sound system in city hall were retained individually to advise staff. The firms were: Auberbach+ Associates, the theatre and media facilities design firm that provided the initial audio/visual conceptual recommendation for the Council Chamber; Charles M Salter Associates Inc, consultants in acoustics and audio/visual system design; and Ceitronics, the firm that installed all the electronics in the Chamber. This included the wiring and connectivity between the Chamber, work session room, prefunction area and all the monitors, as well as the connectivity with TCI.

With respect to the Council Chamber, a principal consultant with Charles M Salter, made several visits to city hall and sat in a portion of a Council meeting. He indicated that he observed that the speech was for the most part intelligible, although somewhat "muddy" sounding, especially with speakers with deeper voices. He indicated, further, that the muddiness in the speech reinforcement system can primarily be attributed to excessive reverberation in the room due to the lack of any acoustically absorptive material being used in the room. Therefore, the recommendation from the Salter firm was 1) that the speech


equalizers be adjusted so that the equalization curve be attenuated 6 decibels per octave below 250 Hz, this has been done by Ceitronics, and 2) acoustically absorptive material be applied to portions of the wall and ceiling surfaces in the room.

The consultant with the Salter firm suggested that if the city does not desire to undertake modifications to the ceiling in the room, that acoustically absorptive material could be installed behind the fabric around the upper portion of the room. This would reduce the amount of sound reverberation occurring in the room, the goal being a reduction from the current reverberation time of 1.6 seconds to no greater than 1 second. Staff is currently obtaining the cost and an understanding of the required work to do this from an acoustics material supply and installation company suggested by the consultant. It should be noted that the consultant estimated the cost of this work to be about \$18,000.

The rotunda presents a greater challenge given its height, the amount of glass and other hard surfaces that comprise this unique circular space. Just as with the Council Chamber, the issue is reducing the amount of reverberation that can occur in the room. But, the rotunda presents the additional challenge that the high noise floor created by the HVAC system would require an audio reinforcement system's level to be raised to such a degree as to exacerbate the reverberant noise problem.

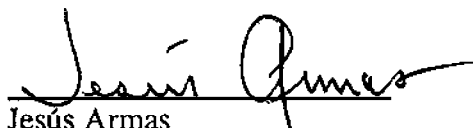
To enhance the audio in the rotunda, staff is moving in the direction of installing a permanent sound reinforcement system in the space. Based on consultation among the three consultants, Ceitronics has proposed a system that includes a series of outlets for speakers and microphones placed in the columns and walls at various locations in the rotunda and the placement of a master system control under the grand stair case. This will allow for the flexibility in the placement of speakers and microphones depending on the function in the space. Staff is working with Ceitronics to determine the costs associated with the specific equipment and work to complete the audio enhancements for the rotunda.

Prepared by:



Gordon R. Anderson  
Assistant City Manager

Approved by:



Jesús Armas  
City Manager